Supplement

Epidemiology of SARS-CoV-2 infection in Karnataka State, South India: Transmission dynamics of symptomatic Vs Asymptomatic infections

Narendra Kumar*, Shafeeq K Shahul Hameed*, Girdhara R Babu**, Manjunatha M Venkataswamy, Prameela Dinesh*, Prakash Kumar BG*, Daisy A. John**, Anita Desai and Vasanthapuram Ravi§

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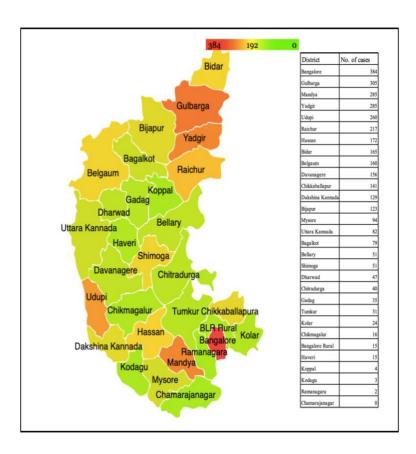


Figure S1: Heat map depicting the distribution of COVID 19 cases district wise in Karnataka State. Note the green in the heat map represents very few or no cases while red depicts large number of cases.

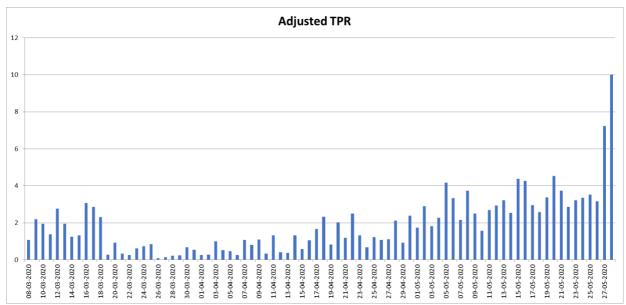


Figure S2: Adjusted Test Positivity Rate (TPR) during the study period. X axis denotes the dates of the study period while the Y axis denotes the adjusted percent test positivity rate. Note: The initial test positivity rate was 1% on March 8, 2020 which gradually declined to less than 1% until mid-April 2020, following which there was a steady increase in adjusted TPR until the end of the study (10%).

Supplementary Table S1: Details of RT-PCR kits

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S. No	Name of the Kit	Target gene (s) amplified	Sensitivity (%)	Specificity (%)		
1.	ICMR NIV two well SARS-CoV-2 Detection Assay	E, RdRp and ORF gene	95	100		
2.	A*STAR Fortitude 2.0 COVID-19 Real-Time RT-PCR Test.	Proprietary gene	99	100		
3.	RealStar® SARS-CoV-2 RT-PCR Kit	E and S gene	92	100		

Supplementary Table S2: Frequency distribution of clinical symptoms noted in symptomatic cases (n=308)

Symptom*	No. of cases (%)
Fever	222 (72.1)
Cough	169 (54.8)
Cold	38 (12.3)
Diarrhoea	9 (3)
Breathlessness	83 (27)
Sore throat	47 (15.2)
Sputum	15 (4.9)
Nausea	23 (7.5)
Body ache	39 (12.7)
Nasal discharge	11 (3.6)
Abdominal pain	6 (2)
Chest Pain	17 (5.5)

Altered Sensorium	1 (0.3)
Convulsions	1 (0.3)
Epistaxis	1 (0.3)
Blurred vision	1 (0.3)
Vomiting	7 (2.3)
Tiredness	2 (0.6)
Fatigue	1 (0.3)
Acute Gastroenteritis	1 (0.3)

*Note: There were several combinations of these symptoms in a given patient.

Supplementary Table S3: Co-morbidities in COVID-19 positive patients (n=106)*

Supplementary Table S3: Co-mo	Asymptomatic		Symptomatic	
Type of Co-morbidities	Recovered	Died	Recovered	Total
Arthritis			1	1
Asthma		2		2
Biliary Atresia		1		1
Bronchitis		1	1	2
Chronic Kidney Disease		1		1
Chronic Liver Disease		2		2
Chronic Lung Disease, Pulmonary Tuberculosis and Pancreatitis			1	1
Chronic Obstructive Pulmonary Disease	1		1	2
Chronic Obstructive Pulmonary Disease and Heart Disease			1	1
Chronic Obstructive Pulmonary Disease and Ischemic Heart Disease			1	1
Deep Vein Thrombosis			1	1
Diabetes Mellitus	10	4	5	19
Diabetes Mellitus and Arthritis	1			1
Diabetes Mellitus and Atrial Septal Defect		1		1
Diabetes Mellitus and Asthma			1	1
Diabetes Mellitus and Chronic obstructive Pulmonary Disease		2	1	3
Diabetes Mellitus and Heart Disease			1	1
Diabetes Mellitus and Human Immunodeficiency Virus (HIV)	1			1
Diabetes Mellitus and Hypertension	3	2	5	10
Diabetes Mellitus and Ischemic Heart Disease	1			1
Diabetes Mellitus and Tuberculosis		1		1
Diabetes Mellitus Type II	1			1
Diabetes Mellitus, Chronic Obstructive Pulmonary Disease and Pulmonary Tuberculosis			1	1
Diabetes Mellitus, Hypertension and Asthma		1	1	2
Diabetes Mellitus, Hypertension and Heart Disease		2		2
Diabetes Mellitus, Hypertension and Hypothyroidism		1	1	2
Diabetes Mellitus, Hypertension and Immunocompromised			1	1
Diabetes Mellitus, Hypertension and Ischemic Heart Disease	1	1		2
Diabetes Mellitus, Hypertension and Thyroid			1	1
Diabetes Mellitus, Hypertension and Tuberculosis		1		1
Diabetes Mellitus, Hypertension, Chronic Kidney Disease and Hypothyroid			1	1

Diabetes Mellitus, Hypertension, Chronic Kidney Disease and Malignancy		1	1	2
Epilepsy	1			1
Heart Disease	1			1
Hypertension	7	5	5	17
Hypertension and Chronic Obstructive Pulmonary Disease			1	1
Hypertension and Heart Disease		2		2
Hypertension and Ischemic Heart Disease		3		3
Hypertension and Ischemic Heart disease and Stroke		1		1
Hypertension, Diabetic foot and Chronic Obstructive Pulmonary Disease		1		1
Ischemic Heart Disease and Asthma			1	1
Other co-morbidity	1			1
Thalassemia	1			1
Thyroid	1			1
Hypertension and Myocardial Infarction		1		1
Human Immunodeficiency Virus (HIV)	2			2
Human Immunodeficiency Virus (HIV), Tuberculosis and Chronic Alcoholic		1		1
Bronchopneumonia			1	1
Grand Total	33	38	35	106

^{*}This does not include 52 patients, who were COVID-19 positive. They were classified as "Active" case at the time of completion of analysis and hence their final outcome was not known

Supplementary Table S4: Cause of death among asymptomatic cases.

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Cause of Death	Number of asymptomatic cases			
Myocardial infarction	3			
Traumatic Brain Injury	2			
Suicide	1			
Septic shock	1			
Total	7			

Supplementary Table S5: Secondary attack rate per cluster

Cluster (n)	Symptomatic (90)	Asymptomatic (54)	P value
Total number of patients affected	645	177	
Mean secondary attack rate (Range)	7.1 (1-57)	3.2 (1-22)	P<0.001

Supplementary Table S6: Cluster wise distribution of secondary cases in relation to clinical status index cases.

Cluster type	Index case identity (P number)	Total number of secondary cases resulting from the index case	Clinical status of Secondary cases Asymptomatic Symptomatic	
	19	5	5	0
	25	6	4	2
	52	57	43	14
	89	9	7	2
	125	14	13	1
	127	5	5	0
Symptomatic Index cases	128	42	41	1
cuses	149	4	4	0
	177	5	5	0
	196	48	47	1
	205	28	28	0
	221	40	38	2
	247	6	6	0

	250	7	7	0
	252	6	6	0
	390	18	16	2
	419	34	32	2
	514	13	13	0
	533	44	40	4
	535	4	4	0
	556	38	34	4
	590	13	12	1
	604	4	4	0
	607	20	20	0
	659	29	28	1
	695	5	5	0
	696	4	4	0
	806	4	4	0
	848	8	7	1
	976	5	5	0
	1378	5	2	3
	2180	15	15	0
	Sub-total	545	504	41
	134	22	21	1
	167	16	16	0
	194	7	7	0
	263	8	8	0
	293	5	5	0
	301	5	5	0
	454	7	7	0
Asymptomatic index cases	554	4	4	0
macx cases	790	5	5	0
	869	12	12	0
	1240	6	6	0
	1251	7	6	1
	1483	6	6	0
	1996	4	4	0
	Sub-total	114	112	2
Gr	and total	659	616	43